

## **Fastfind Plus** **Operational Description**

### **Introduction**

The Fastfind Plus is a 406.037MHz PLB with a built in 121.5MHz homing transmitter and GPS module. The beacon is used to locate people on land or water who are in distress. When the PLB is activated, the GPS module acquires and decodes the visible GPS satellite data transmissions, and calculates a position solution. If the number of satellites used in the calculation is greater than 3 and the HDOP, (Horizontal Dilution of precision), is less than 20, then the position data is encoded into the 406.037MHz message and transmitted, enabling identification of the individual in distress and their position to better than 100m. If no valid GPS data is available, default data is encoded into the 406.037MHz message, as specified in the Cospas-Sarsat document G005. In this mode, Doppler shift position calculation is used giving a position accuracy of typically 5km.

### **Beacon Description**

The Fastfind Plus consists of two separate plastic enclosures. One enclosure contains the PCB and associated switches; and the second contains the battery pack. Both enclosures are made from a Polycarbonate/ABS thermoplastic mix; and are internally sprayed with conductive coating to achieve good EMC performance. The PCB enclosure is held together by six screws. A gasket made from silicone is used to provide a waterproof seal. The battery enclosure is ultrasonically welded together to provide a water-proof seal.

The two enclosures are held together by one screw at the base of the product. The battery connection pins are sealed with two 'o'-rings to prevent water ingress into either enclosure.

The PLB has two modes of operation. Distress mode or 'live' activation and a Self-Test mode. The ON switch ('live' activation) is protected against inadvertent activation use by a plastic cover, which acts as an evident tamper seal. The PLB cannot be activated unless the red tamper cover is removed. The Self-Test mode of the PLB can be activated by holding down the OFF button for 10 seconds.

The Fastfind Plus is programmed via an infrared data link. This means that the unique identity number can be programmed into the beacon via a USB interface. This data is then permanently stored in the PLB. This system enables swift and easy programming of the PLB without having to break the watertight seal.

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